INFORMATIK-KOLLOQUIUM
AB Programmiersprachen und Übersetzer
Institut für Computersprachen

computer languages

Einladung

zum Informatik-Kolloquium des
AB Programmiersprachen und Übersetzer am
Freitag, den 17. Juni 2011, um 15 Uhr c.t.
in der Bibliothek E185.1, Argentinierstr. 8, 4. Stock (Mitte)

Es spricht

Dr. Xavier Rival

INRIA Roquencourt / Ecole Normale Supérieure (ENS Paris),
Frankreich

über

A Parametric Shape Analysis based on User-supplied Inductive Definitions

We are going to present a parametric static analysis of programs that manipulate complex data-structures. This analysis aims at inferring complex invariants of programs using inductive and dynamically allocated data-structures, such as complex forms of lists or trees.

Our analysis utilizes user-supplied inductive definitions of the data-structures manipulated by the program, and infers complex invariants using those basic predicates. Our abstract domain relies on a fragment of separation logic with inductive definitions. It can also express low-level local properties, in C programs that perform complex operations at the byte level and capture high level invariants of recursive programs.

We will present our abstraction, and show the main analysis operations including the unfolding operation, which performs a local concretization of abstract predicates for the analysis of common statements and the widening operation, which performs a global abstraction and ensures the termination of the analysis.

(joint work with Bor-Yuh Evan Chang)

Biography: Xavier Rival studied at Ecole Normale Supérieure (Paris) and obtained his PhD in 2005 from Ecole Polytechnique. He worked as a Post-doctorate researcher at the University of California at Berkeley. He joined INRIA as a Junior Research Scientist in 2007 and he has been a member of the Abstraction group joint with Ecole Normale Supérieure (Paris) and CNRS. He holds a Lecturer position at Ecole Polytechnique since 2009. His main research topic is static analysis of safety critical programs using abstract interpretation techniques, and he took part to the design and implementation of the Astree static analyzer. He also worked on certified compilation. More recently, he started working on static analyses for the verification of memory properties of programs that manipulate complex data-structures. (`http://www.di.ens.fr/~rival/`)

Zu diesem Vortrag lädt der *Arbeitsbereich für Programmiersprachen und Übersetzer am Institut für Computersprachen* herzlich ein.
Tee: 14:30 Uhr in der Bibliothek E185.1, Argentinierstr. 8, 4. Stock (Mitte).